

**CLAIMS**

1. A half duplex radio transceiver adapted to transmit and receive on a common frequency, comprising a transmitter and a low IF receiver, further comprising signal generation means, the signal generation means comprising first and second frequency generators, wherein the first frequency generator generates a signal at a nominal carrier frequency during reception and transmission, wherein the second frequency generator generates an offset signal which during reception is at a low IF frequency, and wherein during reception the signal generated by the first frequency generator is combined with the offset signal to produce a down-conversion signal.

2. A transceiver as claimed in claim 1, wherein during transmission the signal generated by the first frequency generator is directly modulated by an information signal.

3. A transceiver as claimed in claim 1, wherein during transmission the offset signal is modulated by an information signal and the signal generated by the first frequency generator is modulated by the modulated offset signal thereby producing a modulated carrier signal.

4. A transceiver as claimed in claim 3, wherein the second frequency generator is locked to a frequency reference during reception, a control signal to the locked second frequency generator is sampled during reception, and the sampled control signal is used to control the frequency modulation deviation during transmission.

5. A transceiver as claimed in claim 3, wherein the second frequency generator comprises a voltage controlled oscillator.

6. A transceiver as claimed in claim 3, wherein the second frequency generator comprises a numerically controlled oscillator.

7. A transceiver as claimed in claim 1, wherein the first frequency generator comprises an oscillator operating at the nominal carrier frequency.

5 8. A transceiver as claimed in claim 1, wherein the first frequency generator comprises an oscillator operating at a frequency higher than the nominal carrier frequency coupled to a division element which delivers in-phase and quadrature signal components at the nominal carrier frequency.

10 9. A transceiver as claimed in any one of claims 1 to 8, wherein the down conversion signal can be switched between high side and low side injection.

15 10. An integrated circuit comprising the radio transceiver as claimed in any one of claims 1 to 8.

11. An integrated circuit comprising the radio transceiver as claimed in claim 9.

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